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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,630	02/21/2002	Shouichi Nomura	02095/LH	8150
1933	7590	06/16/2005	EXAMINER	
FRISHAUF, HOLTZ, GOODMAN & CHICK, PC 220 5TH AVE FL 16 NEW YORK, NY 10001-7708			HUNG, YUBIN	
			ART UNIT	PAPER NUMBER
			2625	

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/080,630	NOMURA, SHOUCHEI	
	Examiner	Art Unit	
	Yubin Hung	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 22 April 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-4,7,9,12,14-20 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 1-4,7,9,12,14,15 and 18-20 is/are allowed.
- 6) Claim(s) 16,17 and 23 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 22 April 2005 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.

- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

Response to Amendment/Arguments

1. This action is in response to amendment filed April 22, 2005
2. Claims 5, 6, 8, 10, 11, 13, 21 and 22 have been cancelled. Claims 19 and 20 have previously been allowed. Claims 1-4, 7, 9, 12, 14-20 and 23 are still pending.
3. In view of applicant's amendment, the objections to the drawings and the specification have been withdrawn.
4. In view of the applicant's amendment, the 35 USC § 112 (2nd paragraph) rejections have been withdrawn.
5. Applicant's arguments, see P. 24, 3rd paragraph through P. 28, 2nd paragraph, filed April 22, 2005, with respect to claims 1, 7, 9, 12 and 14 have been fully considered and are persuasive. The 35 USC § 102 and § 103 rejections of the above claims have been withdrawn.
6. Applicant's arguments with respect to claim 16, see P. 28, 3rd paragraph through P. 29, 2nd paragraph of the response filed April 22, 2005 have been fully considered but they are not persuasive; see below.

7. In remarks Applicant argued in substance:

- 7.1 *that Geiger et al. and Ukita disclose extracting image signals within a particular spatial frequency band (P. 28, 4th paragraph, lines 1-3) and do not disclose conversion (P. 29, 2nd paragraph)*

However, per the analysis of claim 16, both Geiger et al. and Ukita disclose applying spatial filtering to image color component to produce outputs of different characteristics and therefore such filtering processes perform conversion.

Oath/Declaration

8. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
It does not identify the city and either state or foreign country of residence of each inventor. The residence information may be provided on either on an application data sheet or supplemental oath or declaration.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Geiger et al. (US 5,268,751), and in view of Ukita (JP 63-178674, with English abstract).

Regarding claim 16, Geiger discloses

- applying a second spatial-filtering processing to all of said three data sets
[Fig. 7a, ref. 721; Col. 4, line 39-41]
- wherein a capacity for emphasizing a low-spatial frequency region is greater in said second spatial-filtering processing than in said first spatial-filtering processing
[Fig. 7a, ref. 721. Note that a low-pass filter (i.e., the second filter) emphasizes more on the low-frequency region]

Geiger does not expressly disclose

- Applying a first spatial-filtering processing to the data set representing said brightness information

However, Ukita teaches/suggests applying a high-pass filter (i.e., the first spatial-filtering) to the luminance (i.e., brightness) component. [English abstract, constitution, lines 1-8; Fig. 1, ref. 31.]

Geiger and Ukita are combinable because they have aspects that are from the same field of endeavor of signal filtering.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Geiger with the teaching of Ukita by applying a high-pass filter to the brightness component. The motivation would have been to be able to detect high-frequency features such as edges so as to support auto-focusing as Ukita indicates in the abstract.

Therefore, it would have been obvious to combine Ukita with Geiger to obtain the invention as specified in claim 16.

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Geiger et al. (US 5,268,751) and Ukita (JP 63-178674, with English abstract) as applied to claim 16, and further in view of Sugihara et al. (US 5,523,802).

Regarding claim 17, the combined invention of Geiger and Ukita discloses all limitations of its parent, claim 16.

The combined invention of Geiger and Ukita does not expressly disclose

- performing a color coordinate-converting processing in which said brightness information and said chrominance coded information are converted to color component signals, after applying said first spatial-filtering processing and before applying said second spatial-filtering processing

However, Sugihara teaches/suggests converting the luminance (i.e., brightness information) and chrominance information into the R, G and B color components and then applying the low-pass (i.e., the second) spatial-filtering process. [Fig. 7, refs. 1, 2, 3, 4r, 4g, 4b. See also Col. 1, lines 11-36 for the description of identical elements shown in Fig. 1. Note that the high-pass filtering taught by Ukita is applied to the luminance component and therefore before the color conversion.]

The combined invention of Geiger and Ukita is combinable with Sugihara because they have aspects that are from the same field of endeavor of signal filtering.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the combined invention of Geiger and Ukita with the teaching of Sugihara by converting the luminance (i.e., brightness information) and chrominance information into the R, G and B color components and then applying the low-pass (i.e., the second) spatial-filtering process. The motivation would have been to represent the image in a widely used format that is ready for display (say, on a CRT) and also to remove noise from the converted image, as a low-pass filter such as a Gaussian is well known to be capable of.

Therefore, it would have been obvious to combine Sugihara with Geiger and Ukita to obtain the invention as specified in claim 17.

12. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Geiger et al. (US 5,268,751) and Ukita (JP 63-178674, with English abstract) as applied to claim 16, and further in view of Kim (US 6,594,400).

Regarding claim 23, the combined invention of Geiger and Ukita discloses all limitations of its parent, claim 16.

The combined invention of Geiger and Ukita does not expressly disclose said second spatial-filtering processing further comprises the steps of:

- finding sum-of-product values between noticed pixels and peripheral pixels
- establishing said sum-of-product values as values as values of said noticed pixels
- extracting said peripheral pixels, to be employed for a calculation, out of a plurality of discontinuous pixels, wherein distance intervals for extracting said peripheral pixels are unequal relative to each other

However, Kim teaches/suggests a filtering process that selects peripheral pixels from discontinuous pixels from uneven distance intervals to calculate sum-of-product values to be used as the values of the noticed pixels. [Fig. 1, ref. 105; Col. 4, lines 14-19; Col. 6, lines 23-28. Fig. 2, (b)-(e); Col. 5, lines 31-43. See the analyses of claims 21 and 22.]

The combined invention of Geiger and Ukita is combinable with Kim because they have aspects that are from the same field of endeavor of signal filtering.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the combined invention of Geiger and Ukita with the teaching of Kim by applying a (second) filtering process that selects peripheral pixels from discontinuous pixels from uneven distance intervals to calculate sum-of-product values to be used as the values of the noticed pixels. The motivation would have been remove noise (such as the block and ring effects) while maintaining the details of an image, as Kim indicates in Col. 2, lines 45-46 and Col. 3, lines 47-56.

Therefore, it would have been obvious to combine Kim with Geiger and Ukita to obtain the invention as specified in claim 23.

Conclusion and Contact Information

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Kohashi et al. (US 6,816,193) – Discloses an image processing apparatus that high-pass filters luminance signals to enhance edges

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yubin Hung whose telephone number is (571) 272-7451. The examiner can normally be reached on 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yubin Hung
Patent Examiner
June 12, 2005



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